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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,998	07/21/2006	Sylvestre Marillonnet	049202/313866	1908
826 7590 01/21/2010 ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000			EXAMINER ZHENG, LI	
			ART UNIT 1638	PAPER NUMBER
			MAIL DATE 01/21/2010	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/586,998

## Applicant(s)

MARILLONNET ET AL.

## Examiner

LI ZHENG

## Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 18-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 12-17 and 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1-5, 7-8, 12-34 are pending.
2. Applicant's cancellations of claims 6 and 9-11, amendments to claims 1, 15-16, 25 and 29-30, as well as additions of new claim 34 filed on 9/30/2009 are acknowledged.

Claims 18-33 are withdrawn for being drawn to non-elected inventions.

Claims 1-5, 7-8, 12-17 and 34 are examined on the merits.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. The rejections and objections that are not recited in this Office Action are considered as being withdrawn.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a

whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5, 7-8, 12-17 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewandowski et al (US Patent Application Number 2002/0138873) in view of Ainley et al. (U.S. Patent No. 6,384,207).

Claims of 1-8 and 12-16 are drawn to a system for replicating and expressing a sequence of interest in a plant comprising i) a DNA precursor of an RNA replicon derived from a plus-sense single stranded RNA virus comprising at least one sequence of interest and one or more intron; and ii) a DNA precursor of a helper replicon that is incapable of systemic movement in a plant both in the presence and in the absence of said RNA replicon and that is capable of expressing in a plant one or more protein necessary for systemic movement of said RNA replicon; whereby said RNA replicon is capable of replicating and expressing said sequence of interest in a plant but unable to move systemically in a plant in the absence of said one or more proteins expressed by said helper replicon; or wherein that said helper replicon is incapable of systemic movement in a plant is due to the absence of a functional origin of viral particle assembly; or wherein said helper replicon is capable of expressing in a plant a coat protein or a movement protein necessary for said systemic movement of said RNA replicon; or wherein said RNA replicon cannot express a movement protein necessary for said systemic movement of said RNA replicon; or wherein said plant is a tobacco plant; or wherein said replicon lacks a coat protein and said sequence of interest is larger than 1 kb.

Lewandowski et al. teach multiple component TMV vector system for expression of foreign sequences comprising an TMV derived RNA replicon and helper viruses. et al. teach that the RNA replicon is poor with necessary function of systemic movement in plants and the ability of the replicon to be transported systemically in a plant is restored along with helper virus (paragraph [0007]).

Lewandowski et al. do not teach precursor of the RNA amplicon contains one or more introns.

Ainley et al. teach an expression vector containing the intron 1 from maize ADH gene to enhance the steady state level of mRNA of the marker gene (the paragraph bridging columns 13-14).

Given the recognition of those of ordinary skill in the art of the value of enhance expression of gene in plant by inserting intron 1 from maize ADH gene into a marker gene as taught by Ainley et al., it would have been obvious for a person with ordinary skill in the art to modify the vector of Lewandowski et al. by inserting intron 1 from maize ADH gene into a marker gene as taught by Ainley et al. into the GFP gene, resulting in the instant invention. One skilled in the art would have been motivated to do so given the teaching of Ainley et al. that such modification would enhance expression of the marker gene.

Thus the claimed invention would have been *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, especially in the absence of evidence to the contrary.

***Summary***

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li Zheng whose telephone number is 571-272-8031. The examiner can normally be reached on Monday through Friday 9:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Cynthia Collins/  
Primary Examiner, Art Unit 1638